132 134 499 made unusable. In the spring after the melting away of the ice, the bridges completely collapse. The population claims that earlier formations of ice on ice occured only seldom in these same regions. Thus it must be assumed, and Sumgin also points this out, that the formations of ice on ice are encouraged by the building of roads. Through trials and experience, various new methods of road-building have been found which hinder this damage, but it can not be entirely eliminated. In general terms it can be said that in the areas of permafrost road-building is very difficult, requires a longer time, and is done at much greater cost than in other regions.

Of a similar type are the difficulties encountered in building and maintaining railroad lines. In addition to the pulsation of the earth, landslides and solifluction are regarded as being especially dangerous here. In building the Amur railroad line all these hindrances and difficulties became known in detail. Often, without regard to the cost, the lines had to be laid entirely differently from what had originally been planned. Especial difficulty was encountered in providing water for the railroad in the winter in the areas of permafrost. Water had to be drilled from layers which lay under the permafrost. In many places water had to be procured in kilometer-long, heated conduits. A comparison of costs shows best how great the difficulties were in building the Amur railroad line in the areas of permafrost and to what extent these difficulties increased the costs here versus those in other regions. The building of the great Siberian Railroad (as far as Sretensk in Transbaykal), including all preparatory work, required as a mean an expenditure of 67,737 rubles per verst, while the western part of the Amur line from Kuenga to Kerak, whose total lenght is 597 verst, required for pure building costs an average expenditure of 158,000 rubles per verst. Also the maintenance of the railroads requires larger outlays, since the railroad lines, and especially the bridges, require constant and very careful inspection, in order to be able to take /55/ protective measures in time at the slightest sign of any destruction whatsoever. Thus in the course of the year position changes were determined on 50 out of a total of 80 bridges on the Amur railroad, and these position changes had to be eliminated by protection and rebuilding measures.

132 134 342 The permafrost also plays a noteworthy role in the method of construction. Apart from the direct effects of the cold, the buildings in the sphere of the permafrost are subjected to the danger of gradual decay. The reason for this lies principally in the fact that the ground

under a building freezes little if at all during the winter. V.G. Petrov (154) writes on this subject: "The house stands as though on

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154. Petrov, V.G. Naledi na Amursko-Iakutskoi magistrali /Formations Breaking Through the Ice (Aufeisbildungen) in the Amur-Yakutsk Magistracy/. Academy of Science, Moscow, 1930.

the edge of a frozen crust. If now this crust begins to thaw, its edge spreads the house lengthwise and widthwise, and the damage begins." This leads to general deformation of the house and to the gradually sinking in of the house into the ground. Sumgin points out that this danger is caused above all by so-called "swimming" masses, which form under the house and which can be traced back to the changes in the thermic conditions in the ground. With larger structures of several stories, they can often be caused by the pressure of the structure alone. In individual cases it happens that the water in the earth, which lies between the winter freeze and the permafrost and which is under a certain pressure, finds a way into the open underneath the house. It penetrates into the cellar and even into the living quarters and forces the occupants to leave the house. Not uncommonly the penetration of the water occurs so quickly that the occupants do not succeed in rescuing all their possessions from the rooms. The regions of permafrost require construction methods which counteract these dangers. As a rule an attempt is made to lay the foundation so deeply that it has a firm position in the permafrost; to do this, mostly wood or reinforced concrete palings are inserted into prepared holes deep in the permafrost. In the construction of new cities and plants the question of a sufficient and secure foundation plays an important role, and it also is an important factor in the cost estimate. In building the city of Magadan, where apartment buildings with up to six stories were erected, thick layers of earth had to be removed in order to install the foundations so that the foundations became frozen fast into the ground. The sides of the foundations were protected by insulating layers. Often the foundations were entirely embedded in insulating layers here. In order to eliminate all these difficulties, M.M. Kryllov, whom Sumgin cites, had drawn up a plan to be carried out with the help of modern cold technology; this plan envisaged keeping the ground within the construction installations always under a certain temperature with the goal either of preserving the permafrost at a certain depth or even of raising it. However, this proposal has been tried out but little in practice.

Goldi, Olcha, Orochi

101 563 in the winter dog sleds. The position of the women is difficult. Polygamy is permitted. Bride purchase remains today. [342] The Goldi live in small settlements of two to twenty houses, which are built out of mud like Chinese fang-tze /Fansen/. Many of them are half sunk in the earth. In the summer, however, the Goldi gladly leaves his fixed house and moves into his original domed tent, which is covered with birchbark or bast mats. In more recent times many Goldi have taken up the cultivation of vegetables, and they also breed pigs and chickens. The Samaghir, who live on the Gorin, a left tributary of the lower Amur, can be named as relatives of the Goldi. Their culture corresponds to that of the Goldi, but many expressions in their language indicate that they formerly were reindeer breeders. At present they devote themselves exclusively to fishing and hunting. Further downstream live the Olcha, who have also spread to the coast of the Tatar Strait and to Sakhalin. On Sakhalin they call themselves the Orok. The Olcha are also hunters, fishermen, and dog breeders. However, in contrast to the semi-nomadic Goldi, they are sedentary, and they all pursue agriculture in slight measure. Various signs indicate that they also were once reindeer breeders as their relatives, the Orok on Sakhalin, still are today. The total number of Olcha and Orok can scarcely exceed 2,000. More numerous--around 2,500--are the Orochi, who are also often called Udekhe (after the river Udekhe). Split up into numerous small groups, they live in the valleys of the middle and southern Sikhote-Alin' and also on the side toward the sea and the Ussuri. Many of [177] them, especially in the south, are under Chinese influence and speak, reside, and live in a Chinese fashion. However, in the heart of Sikhote-Alin' they have remained rather pure and still live as true forest people, as Arseniev described them, and they show pronounced [141] Tungus traits. The men on the average are 1.60 meters tall, and the women 1.45 meters. Their small hands and feet are striking. [301] Like the Goldi they once wore ear and nose rings, and this custom still exists among the Orochi-Udekhe, although only among the [342] women. They still live in pointed tents in contrast to the domed tents of the Goldi, in which the tent poles are bent together to form a dome and which recall, in their form, the yurts of the Mongols. On long trips, however, the Orochi did not take his tent along, since the tent was too burdensome for him; instead, while he was on his way, he built a simple protective tent out of twigs. The pure Orochi is only a hunter and fisherman. The social order of this people is

Orochi, Gilyak

The social order of this people is peculiar. A council of elders and experienced /107/ people directs the settlement. Everyone is free in his activity, but submits to the community. Every acquisition, every hunting bag is distributed not only among the family but also through the entire settlement. Thus families whose heads go on longer hunting trips and are often away for weeks are taken care of. In the marriage customs there are remnants of group marriage. Faith and superstition are extraordinarily strongly developed. They believe in various gods such as the forest god and the sea god, and they see all of nature animated by spirits. The practical religion, however, is shamanism. The bear is the totem animal. A bear's head is eaten ceremonially and communally in an annual festival. A peculiarity is that a sick person is left when the first signs of death appear, and they return to him only when he is dead. They also avoid the graves of the dead who are buried in the earth, and they also do not disturb the environs of the graves.

101 563 [621] [583] [776] [763] [769]

Of the other Tungus peoples there are still living in the Amur region a few Manchu, Daur, and Solon, who immigrated from Manchuria. In Transbaykal there is still to be mentioned the Orochon, who live in the taiga of the Chita region and are hunters primarily. Reindeer breeding is of less importance among them.

Of the Paleoasiatics only the Gilyak remain in the Amur region and the Ainu on Sakhalin. The main part live in the extreme northeast and consist of Chukchee, Koryak, and Kamchadal, and in addition to these still another group, consisting of Eskimo and Aleut, should be mentioned.

The Gilyak live on the lower Amur and on the coast north and south of the Amur's mouth. Their number is estimated at approximately 2,000. In external features they approach the type of the Tungus-Manchu peoples, but their language deviates completely from the dialects of the Tungus-Manchu peoples, and even from the dialects of the other Paleoasiatic peoples, and recalls the idioms of individual Indian tribes of Northwest America. Dog, seal, and fish skins, in particular, are used for the manufacture of clothing. Their main occupation is fishing and hunting sea animals. However, in the winter they also hunt bears and sables. They always build their dwellings on rivers or near the coast, and they always have a summer and a winter house, which are often right next to one another. Even in the last century they used in winter a "subterranean yurt," as Schrenck named it, an earthen cave, such as was customary among the Koryak and Kamchadal until a few decades ago. One can conclude from this that

[197] [281] 101 563 342

Gilyak, chukchee

101 563 [342] earth dwellings must have been the original winter dwelling of the Paleoasiatics. Even today the Gilyak on the northern coast of Sakhalin live in such earthen caves. The Gilyak on the Amur live at present in primitively built Chinese mud huts. The summer dwelling consists of a tent built on poles partly for protection against floods and further for reasons of better /108/ ventilation. This type of pile dwelling is [171] not to be encountered among any Tungus people; it, however, still exists today among the Kamchadal, who are likewise a Paleoasiatic people. The sole domestic animal is the dog. The Gilyak dog sled, [493] the narta, is built out of birchwood and is very light. The dogs are not harnessed in pairs but individually, and they don't pull with their chest but with their neck. The main food of the Gilyak is fish dried [262] in the air, which they name "ma." Today they also use the same word for bread. They like very much to eat dog and bear meat too. [141] A few decades ago they still were using only bows, arrows, and lances for hunting. Even today they wear on the right index finger--now, of course, as decoration--a metal ring, which formerly served to pro- [583] tect the finger from the stretching of the bow. Group marriage was still customary among the Gilyak in 1905. In their spiritual life, [776] worship of the bear plays a large role: this is a common mark of all Paleoasiatic peoples. Worship of the bear is also practised among the Tungus, but not so markedly; and even among the Russian occupants of the taiga this custom has not remained without influence. Of the Ainu only a part live on Sakhalin; the great majority live on the northern Japanese islands.

The Paleoasiatics in the northeast fall into two groups. The western group consists of the Chukchee, Koryak, and Kamchadal, who are closely related to one another; the eastern group consists of the Asiatic Eskimo and the Aleut. When the Russians first encountered the Paleoasiatic peoples here in the far north, they were still in part on the cultural level of the Stone Age and used stone hachets, stone knives, and weapons with bone points. Even today they show many ancient traits.

The Chukchee or Luoravetlan occupy the peninsula named after them. Some of them are settled on seacoasts and pursue fishing and the hunting of sea animals; some, living as reindeer nomads, [342] traverse the tundra-covered peninsula. A large pointed tent with a round base serves as a dwelling for both groups. It consists of poles placed together and covered with reindeer skins or walrus hides; on the outside down below they are weighted down with stones. The

Koryak, Kamchadal

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together in villages in crudely constructed wooden houses. The leather boats, which they still use for hunting and fishing, are disappearing more and more. The Reindeer Koryak have also already grown far from their original culture. They are primarily reindeer breeders and own large herds. They live nomadic life wandering between the valley regions protected from the wind in the winter and the gnat-free mountainous tundra in the summer. The square winter hut, which is built from wood and is half sunk in the earth, is built in imitation of the Russian house. They recall the old pit dwelling of Europe. Only in the summer do they use their round, transportable tent, which in its original form consisted of a framework of poles covered with reindeer skins. Today, however, it is often only a type of board shanty, since their wanderings are mostly limited to short stretches. The winter huts as a rule lie on rivers and are permanent constructions. Older people often remain in the winter huts even in the summer, and accordingly the Koryak must be designated as semi-nomadic. Physically the Koryak are medium to short in height with straight black hair, slight growth of hair on the face, and brown-bronze skin color. They make their clothes out of reindeer, wolf and dog skins, and they make lighter clothing for the summer from seal skin. In this /110/ they show a color-happy feeling for art and decorate their clothing with strips of hide of different colors or with leather which they form into various ornaments.

[342] [142] [281]

The Kamchadal or Itelmen occupy the southern part of Kamchatka Peninsula, primarily the southern part of the western coast and the Kamchatka valley. Their number earlier must have been much greater, for old reports speak of tens of thousands. Today their number can scarcely be determined since a very large part of the people have been completely Russianized. Many have almost forgotten their own language. It is interesting that numerous Russians in the first wave of colonizers are completely absorbed in the Kamchadal and cannot be distinguished from them at all in mode of living and customs. In some villages on the western coast between Zedanka and Zepochnoye there are still pure Kamchadal, who number around 800 (1930). Often these people alone are designated as Itelmen and contrasted to the Kamchadal. They have abandoned their original earth hut, which can still be encountered in the interior as a base for hunters, and they live in clumsy wooden houses of the Russian type. Fishing is their principal occupation. In the winter, however, they move into the mountains to hunt fur animals. Their houses stand unordered in loose groups on the rivers. When the

[77] [342]

563 167 162 Chinese, Koreans, and numerous small indigenous peoples. The disorders of the revolution after World War I brought many Russians to the Far East. Planned measures for colonization instituted by the Soviet government contributed to this, and by 1926 the population east of Lake Baykal reached around 2.3 million and had risen to 4,040,000 persons by the time of the last census on January 17, 1939. The increase consisted principally of Russians. By 1939 in the Buryat Mongolian ASSR the Russians had an absolute majority with 52.7 percent (in 1941, 57.2 percent) of the entire population of 542,000. In the Chita region, with a total population of 1,159,500, the number of Buryat and other natives can be estimated at most at 50,000, and in the Khabarovsk and coastal region, with a total of 2,338,100 inhabitants, the percentage of indigenous peoples is only 3 percent.

The main part of the Russians are occupied with agriculture and cattle breeding. In addition, fishing and hunting serve as an additional occupation. The professional Russian hunter, the "Promyshlennik," a real runner type, still hasn't died out. The number working in industry has increased sharply in recent years.

563 361 342 Even here the Russian peasant continues the life he used to lead at home, and he troubles himself here no less than he did there. Accordingly one can often recognize in the type of settlement where the settler came from, even if it was decades and more ago. The Great Russians, especially those from the northern regions, prefer residences on rivers and in wooded areas. Their houses are built in the same block house style of the "izba" they used to live in. Hunting and fishing are very popular with them. The White Russians also prefer wooded areas. The Ukrainians, on the other hand, are mostly better farmers; they are to be encountered in especially large numbers in the Khanka Lake area, which is relatively free of woods, and around Bochkarevo /now: Kuybyshevka/, and they are descended in large measure from Cossacks who had been sent from the Don area. Their houses show the same whitewashed mud walls and are covered with straw like their "khata" in the Ukraine, although there is really no shortage of wood. Although there are often rivers flowing nearby, they dig a well near the house as a rule because well water, as they say, is cooler and more tasty. Woods in /114/ the vicinity of Ukrainian settlements soon are destroyed; the Ukrainian uses not only the axe but also fire against the woods. The Ukrainians are especially successful with cattle raising.

The cities, too, show the usual Russian face. In the center of the larger cities there are, in addition to narrow tenement houses, some

pompous, mostly very tasteless buildings of the Czarist period. But in the suburbs one-story log houses with four or more windows often line the unpaved streets with wooden sidewalks for kilometers. In the period of the Soviet regime the large cities have acquired entirely new sections which are transected with asphalt streets lined with trees, and on these streets rise light, detached apartment buildings, often with four or more stories; these apartment buildings seem almost like skyscrapers against the otherwise flat picture of the city. Chimneys and thick, reinforced concrete buildings of the factories, which today are most striking, rise above the new buildings as a rule. Thus in the cities there are the contrasts ranging from the old, primitive, peasant-like suburb to the most modern industrial establishments. Nevertheless, almost nowhere does one note that he is in the Far East. Even in the Chinese quarter of Vladivostock there stand the same whitewashed tenement houses, and only the Chinese writing and the nearby junk harbor betray the fact that one is in an east Asiatic harbor city.

The state-directed economy with its tight compression into cities and collectivization in the country has introduced many new traits in the life and work of the people, and many old, proved things have been destroyed. It has mixed people up and done many new things, so that everything is in the process of fermenting, of being reformed even in the folk life of the Russians.

Chinese, Koreans, and Others

In Transbaykal Chinese are encountered very rarely. They used to be there in larger numbers as traders in Maimache, the present Altin-Bulag, opposite Kyakhta on the Mongolian border, but they were driven from there during the uprising of the Mongols after the first world war.

The first Chinese came to the Amur and Ussuri country as ginseng-seekers, as "panten"/unhardened antlers/ hunters, and as traders, and later also as settlers. As culture pioneers they were valuable everywhere in the wilderness where they could practise agriculture, which they pursued industriously and successfully. Their ability to make capital out of everything, however, soon made them into unscrupulous exploiters of the natives, and, accordingly they were unwanted guests under the Russian administration, especially since they carried their rich earnings out of the country, then /115/, as a sworn community in trade, they suppressed all competition. They

563 also engaged in smuggling gold. In 1900 it came to a catastrophe when the Russian authorities drove all Chinese over the border. At Blagoveshchensk nearly 5,000 perished who were chased with force into the Amur. The building of cities and industry, however, drew them again and again into the country as workers, and many of these remained in the country as settlers or also as frugal artisans. Culturally they have had a very strong influence on the natives, who, like the [177] Udekhe in southern Sikhote-Alin', have not only taken over the material life of the Chinese but have even given up their language in favor of that of the Chinese. Chinese clothing and the Chinese houses have asserted themselves as far as the Gilyak on the lower Amur and stand everywhere in competition with Russian influence, which gradually has asserted itself. The Chinese house, the 'fanse,' [342] has mud walls. Its gabled roof is covered with straw. Almost the entire front side is taken up by large windows, pasted over with oil-paper and covered with bars; these windows can be slid out and removed. On the sides and along the back wall there are no windows. [354] In the interior of the 'fanse' a small stove with an iron boiler lies on each side of the door. Smoke ducts lead from these two stoves under [352] the sleeping places which built from stone and mud, extend along the walls and fill nearly half the room. This type of plank bed, designated a "kang," is approximately 0.50 meters high. From these the smoke ducts then lead to the chimney, which is likewise made of stone and mud. Because of the danger of fire, the chimney always stands alone and somewhat away from the house. It is not uncommon for the 'kang' to have its own heating also. The farm buildings are [351] usually attached to the house at right angles, and the square courtyard thus formed is closed off behind by a wall or a fence. The Chinese also like to mark off a rectangular area in front of the house, or to surround their entire lodging with a wall which is often very thick; the natives, however, mostly are satisfied with the house alone, which is often only a wretched, dirty mud hut, whatever the layout.

[162] Of the 87,999 Chinese who lived in Siberia in 1939, approximately half live in the southern Ussuri region; the remainder are mostly scattered in the cities. The number of women among the Chinese is very slight and amounts to only 6 percent. In the southern Ussuri region, therefore, the number of Chinese-Udekhe half-breeds is large; they are generally designated "tas."

The Korean element in the population is entirely different. Some old villages in the Pos'yet area have existed since time im-

133 by a peaked series of hills, which are 50 to 100 meters high. However, individual hills all appear on the floor of the valley, from which they rise with very steep walls. Adjoining this area to the east is a gently rolling and irregular Tertiary hill country, which acts as a transition to the spurs of the Sikhote-Alin'. South of Khanka Lake and also in [137] the Suyfun depression numerous small oak forests have been preserved which give the picture of the landscape a varied and attractive impression. As a consequence of the good drainage the best agricultural land in the area is to be found in the Suyfun depression. But also in the Tertiary hill country agriculture is making good progress. Here are the /270/ most thickly populated sections of the Maritime Krai, in which, however, the entire region near the coast of the Bay of Peter the Great must be included.

563 Great Russians above all are settling in the Ussuri depression.
•342 Their weathered, colorless log houses which are built of wood, are
241 typical of the settlements in this area. Striking, however, in contrast to their homeland are the relatively flat roofs, which probably indicate the slight covering of snow which they have to bear here. Wheat, oats, and barley predominate in the appearance of their fields, but, in addition to corn, native plants, such as soy beans and perilla, are also appearing more and more. Ukrainians are the predominant settlers in the Khanka depression. As has already been indicated, this is based on historical reasons, since people from the Don above all were used in setting up the Ussuri Cossack formation of 1862. But it is still remarkable that it is Ukrainians who are in the majority in this almost treeless province. The bright color of their whitewashed mud houses dominates the settlements, and between the wheat fields corn comes strongly into the foreground. The Ukrainians here have also taken over for themselves the cultivation of sugar beets, just as they have in their homeland back in Europe. But, in addition, the yellow of the mud huts of the Chinese and Koreans also appears already in the individual settlements and in the village communities. These huts are often enclosed by the same mud walls; and in the flat, dammed-up fields there appears the light green of rice plantings, which are predominant in the damp area to the south of Khanka Lake. Further in the south toward the coast there is no longer a clear separation, but along the coast the Koreans increase. They often dress like Russians, but still they are more often dressed in the traditional white of the native clothing.

The breeding of livestock is pursued in the entire area: cows,